



## CONSUMER PRODUCT SAFETY COMMISSION

### 16 CFR Part 1610

[Docket No. CPSC-2019-0008]

#### Standard for the Flammability of Clothing Textiles

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Final rule.

**SUMMARY:** The U.S. Consumer Product Safety Commission (Commission or CPSC) is amending the Standard for the Flammability of Clothing Textiles. The revisions clarify existing provisions, expand permissible equipment and materials for testing, and update equipment requirements that are outdated. The Commission issues this amendment under the authority of the Flammable Fabrics Act.

**DATES:** This rule is effective on [INSERT DATE 180 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The incorporation by reference of the publication listed in this rule is approved by the Director of the Federal Register as of [INSERT DATE 180 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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#### SUPPLEMENTARY INFORMATION:

##### I. Background

On September 14, 2022, the Commission published a notice of proposed rulemaking (NPR), proposing to amend the Standard for the Flammability of Clothing Textiles at 16 CFR part 1610 (Standard). 87 FR 56289. The Standard was codified under the Flammable Fabrics Act (FFA; 15 U.S.C. 1191-1204). The purpose of the FFA is to prohibit the importation, manufacture for sale, or sale in commerce of any fabric or article of wearing apparel that is “so highly

flammable as to be dangerous when worn by individuals.” Pub. L. No. 83–88, 67 Stat. 111 (June 30, 1953). The Standard accomplishes this by providing a national standard for testing and rating the flammability of textiles and textile products used for clothing. The Standard specifies test equipment, materials, and procedures for testing the flammability of clothing textiles and prohibits the use of highly flammable textiles in clothing.

The amendments proposed in the NPR and adopted in this final rule<sup>1</sup> aim to clarify existing provisions in the Standard and update the specifications for materials and equipment that have become outdated. The amendments do not alter the testing or criteria in the Standard for determining the flammability of a fabric or whether it is permissible for use in clothing; rather, they facilitate accurate testing and classifications by clarifying existing requirements and updating material and equipment specifications to reflect currently available materials, equipment, and technologies.

The amendments proposed in the NPR and adopted in this final rule address three areas of the Standard. First, they aim to clarify and streamline the provisions regarding test result codes (*i.e.*, burn codes), which help determine the classification of a textile and whether it may be used for clothing. The amendments remove an unnecessary code and revise wording in the provisions to clarify the existing requirements. Second, the amendments revise the stop thread specification, which indicates the thread that must be used in flammability testing. The description has become unclear, as threads matching the description in the Standard are no longer readily available. Third, amendments revise the refurbishing requirements in the Standard, which address dry cleaning and laundering specimens during the testing process. In recent years, there have been increasing restrictions on the use of the dry cleaning solvent specified in the Standard, and washing machines that meet the specifications required in the Standard are no longer made.

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<sup>1</sup> The Commission voted 4-0 to approve this rule.

The NPR and CPSC staff's briefing package supporting it included detailed information about the need for the amendments, the rationale for the revisions, and test results illustrating the comparability of the flammability classifications under the existing Standard and amendments. The NPR also included detailed information about 16 CFR section 1610.40 of the Standard, which permits the use of alternative apparatus, procedures, or criteria for tests for guaranty purposes. This allowance permits the continued use of the dry cleaning solvent and laundering methods in the current Standard by relying on CPSC's test results demonstrating the comparability of test results under the current Standard and the amendments.

This final rule adopts the amendments proposed in the NPR, with only minor modifications. Therefore, this notice focuses on comments received in response to the NPR and the minor modifications in the final rule. For detailed information about the amendments, the rationale for them, the comparability of flammability test results under the amendments, and the allowance in 16 CFR section 1610.40, see the NPR and the briefing package supporting it.<sup>2</sup>

## **II. Statutory Requirements for Revising the Standard**

The FFA specifies the requirements for the Commission to issue or amend a flammability standard. To issue a final rule, the Commission must make certain findings and publish a final regulatory analysis. 15 U.S.C. 1193(b), (j)(1), (j)(2). The Commission must find that each regulation or amendment:

- is needed to adequately protect the public from unreasonable risk of the occurrence of fire leading to death, injury, or significant property damage;
  - is reasonable, technologically practicable, and appropriate;
  - is limited to fabrics, related materials, or products that present such unreasonable risks;
- and

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<sup>2</sup> The NPR is available at 87 FR 56289 (Sep. 14, 2022). The briefing package supporting the NPR is available at: <https://www.federalregister.gov/documents/2022/09/14/2022-19505/standard-for-the-flammability-of-clothing-textiles-notice-of-proposed-rulemaking#:~:text=The%20purpose%20of%20the%20Standard%20is%20to%20reduce,procedures%20for%20testing%20the%20flammability%20of%20clothing%20textiles.>

- is stated in objective terms.

*Id.* 1193(b). In addition, to promulgate a regulation, the Commission must make the following findings and include them in the rule:

- if a voluntary standard addressing the risk of injury has been adopted and implemented, that either compliance with the voluntary standard is not likely to result in the elimination or adequate reduction of the risk or injury, or it is unlikely that there will be substantial compliance with the voluntary standard;
- that the benefits expected from the rule bear a reasonable relationship to its costs; and
- that the rule imposes the least burdensome requirement that prevents or adequately reduces the risk of injury.

*Id.* 1193(j)(2).

When issuing a final rule, the Commission must publish a final regulatory analysis with the regulation, which includes:

- a description of the potential benefits and costs of the rule, including benefits and costs that cannot be quantified, and who is likely to receive the benefits and bear the costs;
- a description of reasonable alternatives the Commission considered, their potential costs and benefits, and the reasons the Commission did not choose the alternatives; and
- a summary of significant issues raised by commenters in response to the preliminary regulatory analysis and the Commission's assessment of them.

*Id.* 1193(j)(1).

### **III. The Product and Risk of Injury<sup>3</sup>**

The Standard applies to all items of clothing and fabrics intended to be used for clothing (*i.e.*, articles of wearing apparel), whether for adults or children, for daywear or nightwear,<sup>4</sup> with certain listed exclusions.<sup>5</sup>

Between January 1, 2017, and December 31, 2021 (the most recent years for which data are available), there were an average of 85.8 deaths annually in the United States that involved ignition of clothing. An average of 2.6 of these fatalities involved ignition or melting of nightwear, and an average of 83.2 of these fatalities involved ignition or melting of other clothing. Between 2000 and 2021, the number of clothing fire deaths declined, overall. In addition, using CPSC's National Electronic Injury Surveillance System (NEISS),<sup>6</sup> staff estimates that between January 1, 2018, and December 31, 2022 (the most recent year for which data are complete), an average of 5,500 nonfatal injuries per year were associated with clothing ignition and treated in U.S. hospital emergency departments.

### **IV. Comments on the NPR**

In response to the NPR, CPSC received comments from four commenters: American Apparel and Footwear Association (AAFA), China WTO/TBT National Notification and Inquiry Center (China), a George Washington University student (student), and Consumer Safety Consultancy (CSC). Commenters generally supported updating the Standard and the amendments proposed in the NPR. This section summarizes the comments and responds to them; for a more detailed review of the comments, see Tab B in CPSC staff's briefing package supporting this rule.

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<sup>3</sup> For detailed information about the risk of injury, see Tab A of staff's briefing package supporting this document, available at: <https://www.cpsc.gov/s3fs-public/Final-Rule-to-Amend-the-Standard-for-the-Flammability-of-Clothing-Textiles-16-CFR-part-1610.pdf?VersionId=387WEbEX45Rw24bthoqIaxkMAExYy5eB>.

<sup>4</sup> Other regulations governing the flammability of children's sleepwear, in 16 CFR parts 1615 and 1616, are more stringent than the general wearing apparel flammability standard in 16 CFR part 1610. The amendments in this document would not affect the children's sleepwear standards.

<sup>5</sup> Excluded products include certain hats, gloves, footwear, interlining fabrics, plain surface fabrics meeting specified criteria, and fabrics made from certain fibers that, from years of testing, have been shown to consistently yield acceptable results when tested in accordance with the Standard. 16 CFR 1610.1(c), (d).

<sup>6</sup> NEISS uses a probability sample of hospitals in the United States that represent all U.S. hospitals with emergency departments to identify and generate national estimates of nonfatal injuries treated in emergency departments.

### *A. Test Results Codes*

*Background:* Table 1 to section 1610.4 of the Standard states, among other things, that a raised surface textile fabric is Class 1 if “burn time is 0-7 seconds with no base burns (SFBB).” In the NPR, the Commission proposed to replace the wording “with no base burns (SFBB)” in this description with “with no SFBB burn code.” The purpose of the proposed revision was to clarify the existing criteria for classifications of raised surface textile fabrics by referencing burn code SFBB more clearly, because two similar codes (SFBB poi and SFBB poi\*) do not meet the criteria stated in the table.

*Comment:* CSC expressed confusion with the proposed revision, asserting that the description for Class 1 raised surface textile fabrics should state, “Average Burn time is 0-7 seconds with surface flash only;” that Table 1 is the general criteria for classification; and that the full discussion of how to classify is in section 1610.7.

*Response:* As explained in the NPR, the Class 1 description for raised surface textile fabrics in Table 1 indicates that if a fabric has a burn time between 0 and 7 seconds, it can only be Class 1 if it exhibits rapid surface flash only, and no base burns. Although there are three burn codes that indicate that a base burn occurred—SFBB, SFBB poi, and SFBB poi\*—only SFBB is relevant to this determination because it applies when the base burn occurs as a result of the surface flash. In contrast, SFBB poi and SFBB poi\* only have a base burn due to the flame that impinges on the fabric, not from the intensity of the surface of the fabric itself burning. As such, only fabrics with burn code SFBB, and not SFBB poi and SFBB poi\*, are excluded from being Class 1. As the definition of “base burn” in section 1610.2(a) indicates, SFBB poi and SFBB poi\* are not considered in determining a Class 3 fabric. However, staff is aware that some testers are confused by these provisions and incorrectly use SFBB poi and SFBB poi\* as “base burn” codes for determining Class 3 fabrics. As such, the amendment clarifies the specific burn code—SFBB—being referenced. In addition, although CSC is correct that the regulatory text in the

Standard provides a full discussion of classification, Table 1 to section 1610.4 provides a useful summary.

*Background:* In the NPR, the Commission proposed to add a note to Table 1 to section 1610.4, stating that burn codes SFBB poi and SFBB poi\* are not considered a base burn for purposes of determining Class 2 and 3 fabrics. Class 2 and 3 descriptions for raised surface textile fabrics in the table specify that fabrics in these classes exhibit base burns (SFBB). Only fabrics with a burn code of SFBB, and not SFBB poi and SFBB poi\*, have a base burn that occurs as a result of the surface flash rather than from the point of impingement of the burner. Although Table 1 already references burn code SFBB for the Class 2 and 3 descriptions, the purpose of the added note is to make clear that SFBB refers only to that specific code, and not the other two base burn codes.

*Comment:* In reference to this proposed revision, CSC stated that Table 1 is only a summary of the requirements for classification and it is confusing to put partial information in the table. CSC asserted that the information for evaluating SFBB poi and SFBB poi\* for determining classifications should be in section 1610.7.

*Response:* As noted above, staff is aware that some testers incorrectly use SFBB poi and SFBB poi\* as “base burn” codes, resulting in classifying fabrics as Class 3 when they should be designated as Class 1. The added note in Table 1 will make clear that SFBB poi and SFBB poi\* are not used to determine Class 3 fabrics. Again, although CSC is correct that the regulatory text in the Standard provides a full discussion of classification, Table 1 provides a useful summary.

*Background:* In the NPR, the Commission proposed to streamline section 1610.8, which lists the burn codes and requirements relevant to them, by consolidating similar codes. The Commission proposed to combine burn codes SF uc, SF pw, and SF poi into a single new burn code, SF ntr (no time recorded, does not break stop thread). The three existing codes all describe burning behavior that does not have enough intensity to break the stop thread and, accordingly, have no burn time and all result in a fabric being Class 1. As the NPR explained, the rationale for

the proposed change was that the purpose of burn codes is to determine the classification of fabrics, making it unnecessary to have all three of these codes, which do not result in different classifications.

*Comment:* CSC objected to this proposed change, noting that the codes reflect observations about the intensity of burning, which can indicate to testers or manufacturers characteristics of the fabric or that additional testing may be useful.

*Response:* CPSC agrees that the different burn codes can be helpful to indicate the flammability of a fabric, whether additional testing may be useful, and whether a fabric should be used. Accordingly, the Commission is not adopting the amendment proposed in the NPR to consolidate the three burn codes into a single code, SF ntr. Instead, the Commission is retaining burn codes SF poi, SF pw and SF uc as separate codes. However, to streamline the burn codes for raised surface textile fabrics, the Commission is revising the order of the burn codes for raised surface textile fabrics in section 1610.8(b)(2). See the discussion of the final rule amendments, below, for further explanation.

#### *B. Stop Thread Specification*

*Comment:* All four commenters agreed that the stop thread description needs to be updated. In support of the proposed amendment, AAFA noted that laboratories had reported difficulty in sourcing threads and agreed that a range of Tex<sup>7</sup> sizes was a good option. Two commenters (China and CSC) questioned whether additional testing should be done to identify an appropriate stop thread, specifically suggesting testing with raised surface textile fabrics and Class 3 fabrics (*i.e.*, dangerously flammable fabrics), respectively.

*Response:* As explained in the NPR, staff conducted testing to identify a thread specification that would yield comparable flammability results to the thread currently specified in the Standard, while providing greater clarity about the thread required and using a description

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<sup>7</sup> The Tex system is commonly used to define thread size. “Tex” is defined as the weight, in grams, of 1,000 meters of yarn and is determined by measuring and weighing cotton threads and calculating linear density.



that is readily available on the market. Staff did not use raised surface textile fabrics or Class 3 fabrics in the thread comparison study. The objective of the study was to examine the effect of different stop threads on the burn times under the Standard, so staff aimed to keep as many parameters constant as possible to observe burn time changes that resulted from changing only the stop thread. Staff used plain surface textile fabric, rather than raised surface textile fabric, because it typically has less variation in burn behavior between specimens. Staff did not use Class 3 fabric because it would be more difficult to observe the effect of the thread type on burn times if the burn times were all clustered close to 0 seconds.

### *C. Refurbishing Specifications*

AAFA, China, and the student commenter all expressed support for updating the refurbishing procedures; CSC did not offer comments on this topic.

## **V. Final Rule Amendments**

As noted above, the final rule adopts the amendments proposed in the NPR with only minor modifications. For a detailed explanation of the amendments, the rationale for them, and the testing and information supporting them, see the NPR and briefing package supporting it. This section describes the modifications to the amendments proposed in the NPR that the Commission is adopting in this final rule.

### *A. Test Results Codes*

Currently, section 1610.8(b)(2) of the Standard provides eight possible burn codes for raised surface textile fabrics, which help determine the classification of a fabric. In the NPR, the Commission proposed to update the list of burn codes for raised surface textile fabrics to consolidate redundant codes, eliminate unnecessary and unclear codes, and improve clarity. One such revision proposed to combine three burn codes—SF uc, SF pw, and SF poi—into a single new burn code, SF ntr (no time recorded, does not break stop thread). The rationale was that these three codes all describe burning behavior that does not have enough intensity to break the stop thread and, accordingly, have no burn time and all result in a fabric being Class 1.

Consolidating the three codes would result in the same classifications, but would streamline the regulation.

However, as noted above, CSC pointed out that these three codes can be useful because they indicate different burn behaviors, which can provide information about the characteristics or flammability of the fabric or result in testers or manufacturers opting to conduct further testing. As such, it is helpful to retain the three separate codes, as currently written in the regulations. Accordingly, the Commission is retaining the three separate codes. However, to accomplish the objective of streamlining the burn code list to make them easier to follow, the Commission is revising the order of the burn codes in section 1610.8(b)(2), as follows:<sup>8</sup> SFBB; SFBB poi; SFBB poi\*; SF only; SF poi; SF uc; SF pw.

This order puts the codes used for identifying more flammable and dangerous fabrics (*i.e.*, Class 2 and 3) at the top of the list. Burn code SFBB is first in the list because this code, along with burn time, identifies the most flammable and hazardous fabrics—Class 2 and 3. The next codes—SFBB poi and SFBB poi\*—also involve the flame burning through the base of the specimen, but are not considered base burns. The next code, SF only, is the next most hazardous because it involves the flame traveling the length of the specimen, although the flame does not burn through the base. The remaining codes—SF poi, SF uc, and SF pw—describe burning behavior that poses the least risk, as these all indicate Class 1 fabrics that do not have a burn time and merely describe burn behavior. This revision accomplishes the streamlining of burn codes proposed in the NPR, by allowing testers to identify the most hazardous fabrics first and, thereby, potentially eliminates the need for further testing. However, this revision does not substantively alter the burn codes or their criteria and the resulting classifications.

### *B. Stop Thread Specification*

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<sup>8</sup> Note that, as proposed in the NPR, the burn code “\_ \_ sec.” is being removed from the list of burn codes for raised surface textile fabrics.

In the NPR, the Commission proposed to amend the description of stop thread in section 1610.2(p) and section 1610.5(a)(2)(ii) of the Standard to state that it consists of a spool of “3-ply, white, mercerized, 100% cotton sewing thread, with a Tex size of 35 to 45 Tex.” In this final rule, the Commission adopts that proposed amendment, but revises “Tex size of 35 to 45 Tex” to state, “a Tex size of  $40 \pm 5$ .” This is substantively the same as the NPR and provides the same Tex range as proposed in the NPR, but stating the range with an absolute value is more consistent with other ranges stated in the Standard and, therefore, provides greater clarity and consistency.

### *C. Refurbishing Specifications*

The amendments to the refurbishing specifications proposed in the NPR are adopted in this final rule, without revisions.

## **VI. Section 1610.40 – Use of Alternate Apparatus, Procedures, or Criteria for Tests for Guaranty Purposes**

As explained in the NPR, section 1610.40 of the Standard permits the use of alternative apparatus, procedures, or criteria for tests for guaranty purposes. The FFA states that no person will be subject to prosecution for failing to comply with flammability requirements if that person has a guaranty, meeting specific requirements, that indicates that reasonable and representative tests confirmed compliance with flammability requirements issued under the statute. 15 U.S.C. 1197. For purposes of supporting guaranties, section 1610.40(c) of the Standard states that “reasonable and representative tests” could be either the flammability tests required in the Standard or “alternate tests which utilize apparatus or procedures other than those” in the Standard. The Standard specifies that for persons or firms issuing guaranties to use an alternative apparatus or procedure, the alternative must be “as stringent as, or more stringent than” the test in the Standard, which the Commission will consider met “if, when testing identical specimens, the alternative test yields failing results as often as, or more often than,” the test in the Standard.

Section 1610.40 sets out conditions for using this allowance. A person or firm using the allowance “must have data or information to demonstrate that the alternative test is as stringent as, or more stringent than,” the test in the Standard, and retain that information while using the alternative and for one year after. 16 CFR 1610.40(d)(1), (2), (3), and (f). Section 1610.40 specifies that the Commission will test fabrics in accordance with the Standard and will consider any failing results evidence of non-compliance and a false guaranty. *Id.* 1610.40(e), (g).

As proposed in the NPR, this final rule updates the washing machine specifications in the Standard. However, as explained in the NPR, for purposes of 16 CFR 1610.40, the Commission also concludes that the testing CPSC staff conducted that is discussed in the NPR and in full detail in Tabs D and E of the briefing package supporting the NPR<sup>9</sup> constitutes information demonstrating that the washing procedure specified in the current Standard, as stated below, is as stringent as the washing procedure in AATCC LP1-2021, Laboratory Procedure for Home Laundering: Machine Washing, 2021 (AATCC LP1-2021) that is required in this amendment. The washing procedure in the current Standard is:

- in compliance with sections 8.2.2, 8.2.3 and 8.3.1(A) of AATCC Test Method 124-2006, *Appearance of Fabrics after Repeated Home Laundering* (AATCC TM124-2006),
- using AATCC 1993 Standard Reference Detergent, powder,
- with wash water temperature (IV) ( $120^{\circ} \pm 5^{\circ}\text{F}$ ;  $49^{\circ} \pm 3^{\circ}\text{C}$ ) specified in Table II of AATCC TM124-2006,
- using water level, agitation speed, washing time, spin speed and final spin cycle for “Normal/Cotton Sturdy” in Table III of AATCC TM124-2006, and
- with a maximum wash load of 8 pounds (3.63 kg) and consisting of any combination of test samples and dummy pieces.

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<sup>9</sup> The NPR is available at 87 FR 56289 (Sep. 14, 2022). The briefing package supporting the NPR is available at: <https://www.federalregister.gov/documents/2022/09/14/2022-19505/standard-for-the-flammability-of-clothing-textiles-notice-of-proposed-rulemaking#:~:text=The%20purpose%20of%20the%20Standard%20is%20to%20reduce,procedures%20for%20testing%20the%20flammability%20of%20clothing%20textiles.>

If firms rely on this information and conform to the other requirements in section 1610.40, this will provide an option for them to continue to use washing machines that comply with the provisions in AATCC TM124-2006 in the current Standard.

Likewise, this final rule updates the drying machine specifications in the Standard. However, as with the washing machine specification, for purposes of 16 CFR 1610.40 the Commission concludes that the testing CPSC staff conducted that is provided in the NPR and in full detail in Tabs D and E of the briefing package supporting the NPR<sup>10</sup> constitutes information demonstrating that the drying procedure specified in the current Standard, as stated below, is as stringent as the drying procedure in AATCC LP1-2021 that is required in this amendment. The drying procedure in the current Standard is:

- in compliance with section 8.3.1(A), Tumble Dry, of AATCC TM124-2006,
- using the exhaust temperature ( $150^{\circ} \pm 10^{\circ}\text{F}$ ;  $66^{\circ} \pm 5^{\circ}\text{C}$ ) specified in Table IV, “Durable Press,” of AATCC TM124-2006, and
- with a cool down time of 10 minutes specified Table IV, “Durable Press,” of AATCC TM124-2006.

If firms rely on this information and conform to the other requirements in section 1610.40, this will provide an option for them to continue to use dryers that comply with the provisions in AATCC TM124-2006 in the current Standard.

## **VII. Relevant Existing Standards**

CPSC staff reviewed and assessed several voluntary and international standards that are relevant to clothing flammability:

- AATCC TM124;
- AATCC LP1-2021;

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<sup>10</sup> The NPR is available at 87 FR 56289 (Sep. 14, 2022). The briefing package supporting the NPR is available at: <https://www.federalregister.gov/documents/2022/09/14/2022-19505/standard-for-the-flammability-of-clothing-textiles-notice-of-proposed-rulemaking#:~:text=The%20purpose%20of%20the%20Standard%20is%20to%20reduce,procedures%20for%20testing%20the%20flammability%20of%20clothing%20textiles.>

- ASTM D1230-22, *Standard Test Method for Flammability of Apparel Textiles*; and
- Canadian General Standards Board Standard CAN/CGSB-4.2 No. 27.5, *Textile Test Method Flame Resistance - 45° Angle Test – One-Second Flame Impingement*.

As explained in the NPR, AATCC TM124-2006 is currently incorporated by reference into the Standard as part of the laundering requirements, but washing machines that meet this specification are no longer available on the market. The current version, AATCC TM124-2018, includes washing and drying specifications that are the same as AATCC LP1-2021. However, AATCC TM124 is not a flammability standard; rather, it is intended to evaluate the smoothness appearance of fabrics after repeated home laundering. As such, it contains provisions that are not relevant to flammability testing and lacks provisions that are necessary for flammability testing.

Similarly, the Commission is incorporating by reference portions of AATCC LP1-2021, but this standard also does not include full flammability testing and classification requirements because it is intended as a stand-alone laundering protocol, for use with other test methods. As such, it also contains provisions that are not relevant to flammability testing and lacks provisions that are necessary for flammability testing.

ASTM D1230 is similar to the Standard but contains similar issues to those this rule aims to address (*e.g.*, same unclear stop thread description as the Standard), and it contains different laundering specifications, terminology, and burn codes. As such, the Commission is not adopting provisions from ASTM D1230 because it would not provide the needed clarity that the amendments in this notice provide and would unnecessarily alter provisions in the Standard.

The Canadian standard also is similar to the Standard, but includes several differences from longstanding provisions in the Standard, such as stop thread specifications. Accordingly, adopting provisions from the Canadian standard would unnecessarily alter the Standard when the purpose of the amendments in this rule is to minimize changes to flammability test results while improving the clarity and usability of the Standard.

## VIII. Final Regulatory Analysis

The Commission is issuing this amendment under the FFA, which requires that a final rule include a final regulatory analysis. 15 U.S.C. 1193(j). The following discussion is based on staff's final regulatory analysis, available in Tab C of the final rule briefing package.<sup>11</sup>

### *A. Description of Potential Costs and Benefits of the Amended Rule*

The final regulatory analysis must include a description of the potential benefits and costs of the rule, including unquantifiable benefits and costs.

#### *1. Potential Benefits*

The primary benefit of the amendments is a reduction of burdens for testing laboratories by clarifying existing requirements and updating the specifications for stop thread, dry cleaning, and laundering to include options that are identifiable, permissible for use, and currently available. In addition, the amendments should improve consumer safety because the amendments provide comparable flammability results to the current Standard but would improve testing laboratories' abilities to conduct testing and obtain consistent and reliable results. This should improve consumer safety by ensuring that textiles intended for use in clothing are properly tested and classified so that dangerously flammable textiles are not used in clothing. Staff is unable to quantify these potential benefits but estimates that these benefits are likely to be small.

*Burn Codes.* The amendments to burn codes clarify and streamline these provisions of the Standard, which staff expects will improve the consistency and reliability of flammability testing results and classifications. More consistent and reliable test results, in turn, may provide some safety benefit to consumers, while reducing testing burdens for testing laboratories. Because these amendments are intended to clarify existing provisions and do not change current requirements for testing or classification, staff expects that they will provide a small amount of unquantifiable benefits.

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<sup>11</sup> Staff's briefing package supporting this document is available at: <https://www.cpsc.gov/s3fs-public/Final-Rule-to-Amend-the-Standard-for-the-Flammability-of-Clothing-Textiles-16-CFR-part-1610.pdf?VersionId=387WEbEX45Rw24bthoqIaxkMAExYy5eB>.

*Stop Thread.* The amendments to the stop thread specification in the Standard clarify the type of thread required by using the Tex system, which is commonly used and understood by the industry, to define the thread size. The amendments also expand the range of threads permissible for use under the Standard by providing a range of permissible Tex sizes, rather than specifying a single thread specification, as the current Standard does. As such, the amendments clarify the requirements, which may have consumer safety benefits by yielding more consistent and reliable test results so that the flammability of fabrics are accurately identified. However, these benefits are expected to be small since the amendments provide comparable test results and classifications to the current Standard. The amendments also may ease burdens on testing laboratories, by making it easier to identify compliant thread and by making more threads permissible for use. Therefore, staff expects that these amendments will provide a small amount of unquantifiable benefits.

*Dry Cleaning Specification.* The amendments to the dry cleaning specification continue to allow use of perchloroethylene solvent, but add an additional specification, as an alternative, to accommodate testing laboratories that are unable to use the solvent currently specified in the Standard. The alternative specification, using hydrocarbon solvent, provides comparable flammability results to the perchloroethylene solvent specified in the Standard. CPSC staff assesses that the hydrocarbon solvent is comparable (or lower) in cost than other alternatives. Therefore, staff expects the amendments to reduce burdens on testing laboratories by providing an additional alternative for laboratories that are subject to restrictions on the use of perchloroethylene.

*Laundering Specification.* The amendments to the washing specifications provide a specification that can be met by machines that are currently on the market. Staff expects that this will reduce burdens on testing laboratories because it will eliminate the need to maintain and repair older machines and allow those testing laboratories that can no longer maintain or obtain washing machines that comply with the current Standard to continue to test to the Standard. Staff



expects the amendments to the drying specifications will provide benefits as well. By requiring the use of the same standard for both washing and drying, these amendments streamline the requirements for testing laboratories, making it less cumbersome and less costly than obtaining and following two standards. Moreover, AATCC LP1-2021 is already familiar to many testing laboratories since it is used for other standards as well; as such, using this standard should be clear and low cost. In addition, requiring the use of a single standard (rather than referencing two standards) that is widely familiar to industry members should reduce the risk of confusion or testing errors, which may have some safety benefits for consumers by yielding consistent and reliable test results and classifications.

## *2. Potential Costs*

*Burn Codes.* The amendments regarding burn codes clarify and streamline existing requirements, and do not change any testing, flammability results, or classification criteria. As such, staff does not expect these amendments to have any notable costs.

*Stop Thread.* The amendments regarding the stop thread specification clarify and expand the range of permissible threads. They do not change any testing, flammability results, or classification criteria. As staff's testing indicates, thread that meets the current specification in the Standard would comply with the amendments, and the amendments would allow for the use of a wider range of threads than the current Standard. This will allow testing laboratories to continue to use their existing thread or more easily obtain compliant thread by providing a wider range of options. Therefore, staff does not expect these amendments to have any notable costs.

*Dry Cleaning Specification.* The amendments to the dry cleaning specification allow for the continued use of perchloroethylene solvent, but also provide an additional alternative specification using hydrocarbon solvent. The amendments do not change any testing requirements or criteria and, as staff's testing demonstrates, the hydrocarbon alternative provides comparable flammability results and classifications to the perchloroethylene specification. As such, testing laboratories could continue to use the existing specification, but will also have an

additional option for complying with the Standard. Therefore, staff does not expect these amendments to have any notable costs.

*Laundering Specification.* The amendments regarding the washing specification will require different washing machines than those that currently comply with the Standard, because those machines are no longer available on the market. However, firms have the option to continue using machines that comply with the current Standard under 16 CFR 1610.40, thereby avoiding the need to obtain new washing machines. As explained in the NPR and in this notice, the Commission concludes that, for purposes of 16 CFR 1610.40, the testing CPSC staff conducted that was provided in the NPR and in full detail in Tabs D and E of the briefing package supporting the NPR constitutes information demonstrating that the washing procedure specified in the current Standard is as stringent as the washing procedure in AATCC LP1-2021 that is adopted in this notice. Therefore, if firms rely on this information and conform to the other requirements in section 1610.40, this will provide an option for them to continue to use washing machines that comply with the provisions in AATCC TM124-2006 in the current Standard. This alternative would impose no costs, as testing laboratories could continue to use their existing compliant machines.

Although staff does not expect the amendments to the washing specifications to impose any costs, staff examined potential costs associated with obtaining machines that comply with the amendments to assess the costs to firms that choose to do so, rather than continuing to use existing machines in accordance with the allowance in 16 CFR 1610.40. The primary cost to firms that choose to obtain new machines would be the cost of new washing machines that comply with AATCC LP1-2021. Staff estimates that these machines cost an average of \$4,300. However, this cost would be offset by the reduced costs of no longer needing to repair or maintain existing, outdated machines. Staff estimates that the cost of maintaining and repairing the outdated machines is \$300 annually and assumes that if a laboratory chooses to upgrade machines, it expects to receive benefits from the upgrade that outweigh the acquisition costs.

Firms that choose to obtain new machines might also incur the cost of buying a copy of AATCC LP1-2021, which is approximately \$50 for AATCC members and \$70 for non-members. Staff does not consider this a significant cost and firms will not incur this cost if they already have AATCC LP1-2021 to comply with other standards. Moreover, a read-only copy of AATCC LP1-2021 will be available for viewing on the AATCC website when this rule takes effect.

Staff was unable to determine the number of testing laboratories that test to the Standard and that would, therefore, be subject to the amendments. At a minimum, currently there are more than 300 testing laboratories that are CPSC-accepted third party laboratories that test to the Standard for purposes of children's product certifications. However, that is an underestimate of the number of firms impacted by the rule because testing laboratories need not be CPSC-accepted third party laboratories to test to the Standard for non-children's products. At a maximum, there are a total of 7,389 testing laboratories in the United States, according to the Census Bureau. However, this is an overestimate of the number of firms in the United States impacted by the rule because this number includes testing laboratories that do not test to the Standard. Staff estimates that each testing laboratory that tests to the Standard has three washing machines that do not meet AATCC LP1-2021.

The amendments regarding the drying specification are unlikely to require different dryers than those that currently comply with the Standard because most dryers can comply with both specifications. However, to the extent that dryers that meet the current Standard do not meet the amendments, firms would again have the option to continue to use their existing compliant dryers in accordance with 16 CFR 1610.40. Therefore, this alternative would eliminate any potential costs associated with the amendments. Moreover, because most dryers comply with both the current Standard and AATCC LP1-2021, staff does not expect that most firms will need to replace their dryers even if they chose to comply with AATCC LP1-2021, instead of using 16 CFR 1610.40 to continue to comply with AATCC TM124-2006.

### *B. Alternatives to the Rule*

A final regulatory analysis must describe reasonable alternatives to the rule, their potential costs and benefits, and a brief explanation of the reasons the alternatives were not chosen. 15 U.S.C. 1193(j). CPSC considered several alternatives to the rule.

*Burn Codes.* CPSC considered retaining the current burn code provisions in the Standard, rather than updating them. This alternative would not create any costs, but also would not provide any benefits. In comparison, the amendments do not create any costs, but have benefits by providing needed clarifications.

*Stop Thread Specification.* CPSC considered updating the stop thread specification to require the use of a stop thread with the specific Tex size of the thread currently required in the Standard. This would not create any costs since thread that meets the current Standard would meet this alternative. However, this alternative would be more restrictive than the final rule by providing fewer options of stop threads. Because staff determined that the range of Tex sizes in the rule would provide comparable flammability results to the Standard, while providing a broader range of options, CPSC did not select this alternative.

Another alternative CPSC considered is to allow a wider range of Tex sizes, such as the full range staff assessed during flammability testing and found to yield comparable flammability results to the Standard. This would further reduce burdens on testing laboratories by providing even more options. However, staff concluded that it is more appropriate to limit the range of Tex sizes to those of cotton threads that yielded comparable flammability results to the Standard because some polyester threads are designed to be flame resistant.

*Dry Cleaning Specification.* In addition to the hydrocarbon alternative adopted in this amendment, CPSC considered two additional dry cleaning specifications—silicone and butylal. As staff's testing indicates, both of these alternatives also yield comparable flammability results to the current Standard and, therefore, are likely to offer similar benefits to the hydrocarbon specification. Staff identified estimated costs of the four dry cleaning solvent specifications using

comparisons provided by the Toxic Use Reduction Institute (TURI). These comparisons estimate that dry cleaning with perchloroethylene involves equipment costs between \$40,000 and \$65,000 and solvent costs of \$17 per gallon; dry cleaning with hydrocarbon involves equipment costs between \$38,000 and \$75,000 and solvent costs of \$14 to \$17 per gallon; dry cleaning with silicone involves equipment costs between \$30,500 and \$55,000 and solvent costs of \$22 to \$28 per gallon; and dry cleaning with butylal involves equipment costs between \$50,000 and \$100,000 and solvent costs of \$28 to \$34 per gallon. CPSC selected hydrocarbon rather than the silicone or butylal alternatives because butylal yielded classifications consistent with the current Standard slightly less often during comparison testing; hydrocarbon is the most commonly used alternative to perchloroethylene; hydrocarbon has a long history of use; and several companies manufacture hydrocarbon solvents for dry cleaning, whereas silicone and butylal are newer technologies and patented, making their availability more limited.

CPSC also considered requiring the use of only the hydrocarbon specification, rather than continuing to allow the use of the perchloroethylene specification in the current Standard. However, this alternative could increase costs by requiring all testing laboratories to change their dry cleaning specifications. CPSC did not select this option because, although perchloroethylene is being restricted in some locations, it is still available and widely used in the dry cleaning industry.

*Laundrying Specification.* In addition to the AATCC LP1-2021 alternative adopted in this amendment, CPSC considered an alternative of continuing to require compliance with the laundrying specification in AATCC TM124-2006, but with a reduced agitation speed. As staff's testing indicates, this alternative yields flammability results comparable to the current Standard and, therefore, would likely offer similar benefits to the AATCC LP1-2021 specification adopted. However, this alternative may have higher costs than the amendment because laboratory-grade washing machines are not sold pre-programmed to the reduced agitation speed settings, but they are sold pre-programmed with the AATCC LP1-2021 settings. Consequently,

additional time and skilled labor resources would be necessary to program machines to meet the reduced agitation speed alternative, and there would be the potential for testing errors. CPSC did not select this option because testing laboratories are likely to already have and be familiar with AATCC LP1-2021 and have machines that comply with it since it is required for other standards and there are more washing machines on the market that meet the specifications in LP1-2021 than the reduced agitation speed parameters.

CPSC also considered amending the Standard to allow the use of either the AATCC LP1-2021 specifications or the AATCC TM124-2006 specifications. Similarly, CPSC considered amending the Standard to include the specifications in AATCC LP1-2021, while allowing for the continued use of AATCC TM124-2006 for a limited phase-out period. These alternatives would have minimal, if any, costs because they would allow testing laboratories to continue to use existing machines, while providing an option to obtain machines that are available on the market. CPSC did not select these options because they both would leave CPSC unable to test for compliance in accordance with one of the procedures in the Standard when CPSC's machines that comply with AATCC TM124-2006 reach the end of their useful lives; this would retain in the Standard an outdated and obsolete specification that is no longer possible to meet with products available on the market; and staff does not have information about an appropriate phase-out period for machines that comply with AATCC TM124-2006. Although CPSC did not select either of these alternatives, firms would still be able to continue to use machines that comply with AATCC TM124-2006, instead of machines that comply with AATCC LP1-2021, under the provisions in 16 CFR 1610.40.

For dryers, CPSC considered retaining the current provisions in the Standard, which reference AATCC TM124-2006, because dryers that meet this standard are still available on the market. This alternative would eliminate any costs associated with the amendment to dryer specifications. CPSC did not select this option because requiring the use of a single standard ensures compatible washing and drying requirements and reduces confusion and costs associated

with obtaining and following two separate standards. In addition, because the dryer specifications in AATCC TM124-2006 and AATCC LP1-2021 are nearly identical, testing laboratories are unlikely to need to replace their dryers to meet the amendments and, for those that do, the allowance in 16 CFR 1610.40 would mitigate or eliminate that need.

### *C. Significant Issues Raised by Commenters*

A final regulatory analysis must include a summary of significant issues raised by commenters in response to the preliminary regulatory analysis and CPSC's assessment of those comments. 15 U.S.C. 1193(j). CPSC did not receive any comments regarding the preliminary regulatory analysis in the NPR or any comments regarding costs, benefits, or alternatives, generally.

## **IX. Paperwork Reduction Act**

This rule does not involve any new information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3521). The Standard does contain recordkeeping provisions, but this rule would not alter the estimated burden hours to establish or maintain associated records from the information collection approved previously.<sup>12</sup>

## **X. Regulatory Flexibility Act Analysis**

When an agency is required to publish a proposed rule, the Regulatory Flexibility Act (5 U.S.C. 601-612) requires that the agency prepare an initial regulatory flexibility analysis (IRFA) at the NPR stage and a final regulatory flexibility analysis (FRFA) at the final rule stage. An IRFA and FRFA must contain specific content that describes the impact that the rule would have on small businesses and other entities. 5 U.S.C. 603, 604. However, an IRFA and FRFA are not required if the head of the agency certifies that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." *Id.* 605(b). The agency must publish the certification in the *Federal Register* along with the NPR or final rule, include

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<sup>12</sup> See Office of Management and Budget (OMB) Control No. 3041-0024.

the factual basis for the certification, and provide the certification and statement to the Chief Counsel for Advocacy of the Small Business Administration. *Id.*<sup>13</sup>

In the NPR, the Commission certified that the proposed amendments, if adopted, would not have a significant economic impact on a substantial number of small entities. As support for the certification, the Commission noted that there are little to no estimated costs associated with the rule because the amendments reduce burdens on industry, maintain or expand existing requirements, or firms may rely on the allowance in 16 CFR 1610.40 to continue to use equipment that is being updated in the amendments. The factual basis for the certification is in Tab F of the NPR briefing package and Tab C of the final rule briefing package, but the NPR provided an overview, including information about the small entities to which the rule would apply; the potential economic impact of the rule on small entities; the criteria CPSC used for a “significant economic impact” and a “substantial number”; assumptions and uncertainties; and a request for comments.

CPSC did not receive any comments regarding the certification or the economic analysis in the NPR, or any new cost, market, or other information or data that would change the economic impact assessments in the NPR. Therefore, because the amendments in this rule are consistent with those proposed in the NPR, the Commission certifies that the amendments will not have a significant economic impact on a substantial number of small entities, for the reasons stated in the NPR.

## **XI. Incorporation by Reference**

This rule incorporates by reference AATCC LP1-2021. The Office of the Federal Register (OFR) has regulations regarding incorporation by reference. 1 CFR part 51. Under these regulations, in the preamble, an agency must summarize the incorporated material, and discuss

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<sup>13</sup> For additional details regarding certifications, see *A Guide for Government Agencies: How to Comply with the Regulatory Flexibility Act*, SBA Office of Advocacy (Aug. 2017), available at: <https://advocacy.sba.gov/2017/08/31/a-guide-for-government-agencies-how-to-comply-with-the-regulatory-flexibility-act/>.



the ways in which the material is reasonably available to interested parties or how the agency worked to make the materials reasonably available. 16 CFR 1110.5(a). In accordance with the OFR requirements, this preamble summarizes the provisions of AATCC LP1-2021 that the Commission incorporates by reference.

The standard is reasonably available to interested parties and interested parties can purchase a copy of AATCC LP1-2021 from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709; telephone (919) 549-8141; [www.aatcc.org](http://www.aatcc.org). Once this rule takes effect, a read-only copy of the standard will be available for viewing on the AATCC website. Interested parties can also schedule an appointment to inspect a copy of the standard at CPSC's Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, telephone: 301-504-7479; e-mail: [cpsec-os@cpsc.gov](mailto:cpsec-os@cpsc.gov).

## **XII. Testing, Certification, and Notice of Requirements**

Because the Standard applies to clothing and textiles intended to be used for clothing, it applies to both non-children's products and children's products. Section 14(a) of the Consumer Product Safety Act (CPSA; 15 U.S.C. 2051-2089) includes requirements for testing and certifying that non-children's products and children's products comply with applicable mandatory standards issued under any statute the Commission administers, including the FFA. 15 U.S.C. 2063(a). The Commission's regulations on certificates of compliance are codified at 16 CFR part 1110.

Section 14(a)(1) addresses required testing and certifications for non-children's products and requires every manufacturer of a non-children's product, which includes the importer,<sup>14</sup> that is subject to a rule enforced by the Commission and imported for consumption or warehousing or distributed in commerce, to issue a certificate. The manufacturer must certify, based on a test of

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<sup>14</sup> The CPSA defines a "manufacturer" as "any person who manufactures or imports a consumer product." 15 U.S.C. 2052(a)(11).

each product or upon a reasonable testing program, that the product complies with all rules, bans, standards, or regulations applicable to the product under statutes enforced by the Commission. The certificate must specify each such rule, ban, standard, or regulation that applies to the product. 15 U.S.C. 2063(a)(1).

Sections 14(a)(2) and (a)(3) address testing and certification requirements specific to children's products. A "children's product" is a consumer product that is "designed or intended primarily for children 12 years of age or younger." 15 U.S.C. 2052(a)(2). The CPSA and CPSC's regulations provide factors to consider when determining whether a product is a children's product. 15 U.S.C. 2052(a)(2); 16 CFR 1200.2. An accredited third party conformity assessment body (third-party lab) must test any product that is subject to a children's product safety rule for compliance with the applicable rule. 15 U.S.C. 2063(a)(2)(A); *see* 77 FR 31086, 31105 (May 24, 2012). After this testing, the manufacturer or private labeler of the product must certify that, based on the third-party lab's testing, the product complies with the children's product safety rule. 15 U.S.C. 2063(a)(2)(B).

The Commission must publish a notice of requirements (NOR) for third-party labs to obtain accreditation to assess conformity with a children's product safety rule. 15 U.S.C. 2063(a)(3)(A). The Commission must publish an NOR for new or revised children's products standards not later than 90 days before such rules or revisions take effect. *Id.* 2063(a)(3)(B)(vi). The Commission previously published an NOR for the Standard.<sup>15</sup> The NOR provided the criteria and process for CPSC to accept accreditation of third-party labs for testing products to 16 CFR part 1610. Part 1112 provides requirements for third-party labs to obtain accreditation to test for conformance with a children's product safety rule, including the Standard. 16 CFR 1112.15(b)(20).

The rule does not require third-party labs to change the way they test products for compliance with the Standard. The amendments to burn codes do not alter test protocols; they

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<sup>15</sup> *See* 75 FR 51016 (Aug. 18, 2010), amended at 76 FR 22608 (Apr. 22, 2011); 78 FR 15836 (Mar. 12, 2013).

merely clarify existing requirements. The amendments regarding stop thread and dry cleaning specifications continue to allow the use of specifications consistent with the current Standard. Although the amendments regarding laundering specifications differ from the current Standard, 16 CFR 1610.40 provides an allowance for the continued use of laundering specifications under the current Standard. Accordingly, the existing accreditations that the Commission has accepted for testing to the Standard will cover testing to the revised Standard, and CPSC-accepted third party conformity assessment bodies are expected to update the scope of their accreditations to reflect the revised Standard in the normal course of renewing their accreditations.

### **XIII. Environmental Considerations**

The Commission's regulations address whether CPSC is required to prepare an environmental assessment (EA) or an environmental impact statement (EIS). 16 CFR 1021.5. Those regulations list CPSC actions that "normally have little or no potential for affecting the human environment," and, therefore, fall within a "categorical exclusion" under the National Environmental Policy Act (42 U.S.C. 4321-4370h) and the regulations implementing it (40 CFR parts 1500 through 1508) and do not require an EA or EIS. 16 CFR 1021.5(c). Among those actions are rules that provide design or performance requirements for products, or revisions to such rules. *Id.* 1021.5(c)(1). Because this rule makes minimal revisions to the equipment and materials used for flammability testing in the Standard, and makes minor revisions for clarity, the rule falls within the categorical exclusion, and thus, no EA or EIS is required.

### **XIV. Preemption**

In accordance with Executive Order (EO) 12988, *Civil Justice Reform*, CPSC states the preemptive effect of the rule, as follows. 61 FR 4729 (Feb. 7, 1996). Section 16 of the FFA provides that when a flammability standard or other regulation for a fabric, related material, or product is in effect under the FFA, no state or political subdivision may establish or continue in effect a flammability standard for such fabric, related material or product if it is designed to protect against the same risk as the standard under the FFA unless the state or political

subdivision standard is identical to the Federal standard. 15 U.S.C. 1203(a). The federal government, or a state or local government, may establish or continue in effect a non-identical requirement for its own use that is designed to protect against the same risk as the CPSC standard if the federal, state, or local requirement provides a higher degree of protection than the CPSC requirement. *Id.* 1203(b). In addition, states or political subdivisions of a state may apply for an exemption from preemption regarding a flammability standard or other regulation applicable to a fabric, related material, or product subject to a standard or other regulation in effect under the FFA. Upon such application, the Commission may issue a rule granting the exemption if it finds that: (1) compliance with the state or local standard would not cause the fabric, related material, or product to violate the federal standard; (2) the state or local standard provides a significantly higher degree of protection from the risk of occurrence of fire than the CPSC standard; and (3) the state or local standard does not unduly burden interstate commerce. *Id.* 1203(c).

## **XV. Effective Date**

Section 4(b) of the FFA specifies that an amendment to a flammability standard shall take effect 12 months after the date the amendment is promulgated unless the Commission finds, for good cause shown, that an earlier or later effective date is in the public interest and publishes the reasons for that finding. 15 U.S.C. 1193(b).

The amendments to the Standard adopted in this notice take effect six months after publication of the final rule in the *Federal Register*. The Commission finds that this earlier effective date is in the public interest because the Standard provides an important safety benefit and the amendments provide some improvement to those benefits, with little to no costs. Moreover, a shorter effective date is justified given that the amendments should have minimal impacts, improve clarity, and relieve burdens; the prohibition on the use of perchloroethylene in dry cleaning in California took effect in January 2023; and washing machines that meet the Standard are no longer available.

Section 4(b) of the FFA also requires that an amendment of a flammability standard exempt fabrics, related materials, and products “in inventory or with the trade” on the date the amendment becomes effective, unless the Commission prescribes, limits, or withdraws that exemption because it finds that the product is “so highly flammable as to be dangerous when used by consumers for the purpose for which it is intended.” Because the amendments adopted in this notice are intended to have minimal impacts, the Commission concludes that products in inventory or with the trade on the date the amendment becomes effective are exempt from the amended Standard.

## **XVI. Findings**

As discussed in section **II. Statutory Requirements for Revising the Standard**, above, the FFA requires the Commission to make certain findings when it issues or amends a flammability standard. 15 U.S.C. 1193(b), (j)(2). This section discusses the support for those findings.

*The amendments are needed to adequately protect the public against unreasonable risk of fire leading to death, injury, or significant property damage.* Since the requirements in the Standard were promulgated in 1953, industry practices, equipment, materials, and procedures have evolved, making some parts of the Standard outdated or unclear. Because the Standard determines whether a fabric is safe for use in clothing, it is necessary to replace requirements for outdated and unavailable equipment, materials, and procedures and clarify unclear provisions, to ensure that flammability testing can be performed and that the results of the testing yield consistent, reliable, and accurate flammability classifications so that dangerously flammable fabrics are not used in clothing.

*The amendments are reasonable, technologically practicable, and appropriate, and are stated in objective terms.* The amendments streamline existing requirements and update specifications for outdated equipment, materials, and procedures. The amendments reflect changes recommended by industry members, and allow for the use of equipment, materials, and

procedures that are commonly used by industry members, recognized in standards developed by industry, are readily available, and stated in objective terms.

*The amendments are limited to fabrics, related materials, and products that present an unreasonable risk.* The amendments do not alter the textiles or products that are subject to the Standard, which addresses products that present an unreasonable risk.

*Voluntary standards.* CPSC identified four relevant voluntary standards. AATCC Test Method 124-2018, *Appearance of Fabrics after Repeated Home Laundering*, includes provisions that are relevant to flammability testing and is similar to portions of the Standard, but is not a flammability standard. Rather, it is intended to evaluate the smoothness appearance of fabrics after repeated home laundering. As such, it contains provisions that are not relevant to flammability testing and lacks provisions that are necessary for flammability testing. AATCC's Laboratory Procedure 1-2021, *Home Laundering: Machine Washing*, also includes provisions that are relevant to flammability testing and is similar to portions of the Standard but is not a flammability standard. Rather, it is intended as a stand-alone laundering protocol, for use with other test methods, such as a flammability standard. Therefore, it contains provisions that are not relevant to flammability testing and lacks provisions that are necessary for flammability testing. ASTM D1230-22, *Standard Test Method for Flammability of Apparel Textiles*, is similar to the Standard, but contains different laundering specifications, terminology, and burn codes, and it does not address issues identified in this rule, such as clarification of the stop thread specification. Canadian General Standards Board Standard CAN/CGSB-4.2 No. 27.5, *Textile Test Method Flame Resistance - 45° Angle Test – One-Second Flame Impingement*, also is similar to the Standard, but includes several differences from longstanding provisions in the Standard, such as stop thread specifications. As such, adopting provisions in the Canadian standard would unnecessarily alter the Standard when the purpose of the amendments in this rule is to minimize changes to flammability test results while improving the clarity and usability of the Standard. Compliance with these voluntary standards is not likely to result in the elimination

or adequate reduction of the risk of injury identified by the Commission. The amendments will better address the risk of injury than these voluntary standards by retaining the longstanding provisions in the Standard that have been demonstrated to effectively address the flammability hazard, while making minimal revisions to ensure the accuracy of flammability classifications by improving the clarity of the requirements and updating outdated equipment and materials.

*Relationship of benefits to costs.* Because the amendments reflect current industry practices and provide needed clarifications, the anticipated benefits and costs are expected to be small and bear a reasonable relationship to each other.

*Least burdensome requirement.* The amendments do not substantively change the Standard but provide changes that are necessary for clarity and so that testing laboratories may obtain necessary materials and equipment to conduct testing. Several amendments expand the permissible range of materials or equipment to reduce burdens. For revisions that include new equipment or materials, the amendments either allow use of the new materials and equipment as additional alternatives, or the Commission provides information to support the continued use of equipment or materials in the current Standard under 16 CFR section 1610.40.

## **XVII. Congressional Review**

The FFA requires CPSC to transmit a copy of a flammability regulation to the Secretary of the Senate and the Clerk of the House of Representatives. 15 U.S.C. 1204. The Congressional Review Act (CRA; 5 U.S.C. 801-808) similarly states that before a rule may take effect, the agency issuing the rule must submit the rule, and certain related information, to each House of Congress and the Comptroller General. 5 U.S.C. 801(a)(1). The CRA submission must indicate whether the rule is a “major rule.” The CRA states that the Office of Information and Regulatory Affairs (OIRA) determines whether a rule qualifies as a “major rule.” A “major rule” is one that OIRA finds has resulted in or is likely to result in:

- an annual effect on the economy of \$100,000,000 or more;

- a major increase in costs or prices for consumers, individual industries, government agencies, or geographic regions; or
- significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S. enterprises to compete with foreign enterprises in domestic and export markets.

5 U.S.C. 804(2).

Because the costs and benefits associated with this rule are expected to be minimal, OIRA determined that this is not a major rule. To comply with the CRA and FFA, CPSC will submit the required information to the appropriate Congressional offices and the Comptroller General.

## **XVIII. Conclusion**

For the reasons stated in this preamble, the Commission concludes that the amendments to the Standard adopted in this notice are needed to protect the public against unreasonable risk of the occurrence of fire leading to death or personal injury, or significant damage.

## **List of Subjects**

### **16 CFR Part 1610**

Clothing, Consumer protection, Flammable materials, Incorporation by reference, Reporting and recordkeeping requirements, Textiles, Warranties.

For the reasons discussed in the preamble, the Commission amends title 16 of the Code of Federal Regulations by revising part 1610 to read as follows:

## **PART 1610—STANDARD FOR THE FLAMMABILITY OF CLOTHING TEXTILES**

1. The authority citation for part 1610 continues to read as follows:

**Authority:** 15 U.S.C. 1191-1204.

2. Amend § 1610.2 by revising paragraphs (a) and (p) to read as follows:

### **§ 1610.2 Definitions.**

\* \* \* \* \*



(a) *Base burn* (also known as base fabric ignition or fusing) means the point at which the flame burns the ground (base) fabric of a raised surface textile fabric and provides a self-sustaining flame. Base burns, used to establish a Class 2 or 3 fabric, are those burns resulting from surface flash that occur on specimens in places other than the point of impingement (test result code SFBB) when the warp and fill yarns of a raised surface textile fabric undergo combustion. Base burns can be identified by an opacity change, scorching on the reverse side of the fabric, or when a physical hole is evident.

\* \* \* \* \*

(p) *Stop thread supply* means 3-ply, white, mercerized, 100% cotton sewing thread, with a Tex size of  $40 \pm 5$ .

\* \* \* \* \*

3. Amend § 1610.4 by revising paragraphs (a)(2), (b)(2), (c)(2), and Table 1 to read as follows:

**§ 1610.4 Requirements for classifying textiles.**

(a) \* \* \*

(2) *Raised surface textile fabric.* Such textiles in their original state and/or after being refurbished as described in § 1610.6(a) and (b), when tested as described in § 1610.6, shall be classified as Class 1, Normal Flammability, when the burn time is more than 7.0 seconds, or when they burn with a rapid surface flash (0.0 to 7.0 seconds), provided the intensity of the flame is so low as not to ignite or fuse the base fabric.

(b) \* \* \*

(2) *Raised surface textile fabric.* Such textiles in their original state and/or after being refurbished as described in § 1610.6(a) and (b), when tested as described in § 1610.6, shall be classified as Class 2, Intermediate Flammability, when the burn time is from 4.0 through 7.0 seconds, both inclusive, and the base fabric starts burning at places other than the point of impingement as a result of the surface flash (test result code SFBB).

(c) \* \* \*

(2) *Raised surface textile fabric*. Such textiles in their original state and/or after refurbishing as described in § 1610.6(a) and § 1610.6(b), when tested as described in § 1610.6, shall be classified as Class 3, Rapid and Intense Burning, when the time of flame spread is less than 4.0 seconds, and the base fabric starts burning at places other than the point of impingement as a result of the surface flash (test result code SFBB).

Table 1 to § 1610.4 – Summary of Test Criteria for Specimen Classification

[See § 1610.7]

Class	Plain surface textile fabric	Raised surface textile fabric
1	Burn time is 3.5 seconds or more. ACCEPTABLE (3.5 seconds is a pass)	(1) Burn time is greater than 7.0 seconds; or (2) Burn time is less than or equal to 7.0 seconds with no SFBB test result code. Exhibits rapid surface flash only. ACCEPTABLE – Normal Flammability
2	Class 2 is not applicable to plain surface textile fabrics.	Burn time is 4.0 to 7.0 seconds (inclusive) with base burn (SFBB). ACCEPTABLE – Intermediate Flammability
3	Burn time is less than 3.5 seconds. NOT ACCEPTABLE	Burn time is less than 4.0 seconds with base burn (SFBB). NOT ACCEPTABLE – Rapid and Intense Burning

Note: SFBB poi and SFBB poi\* are not considered a base burn for determining Class 2 and 3 fabrics.

4. Amend § 1610.5 by revising paragraphs (a)(2)(ii), (b)(6), and (b)(7) to read as follows:

**§ 1610.5 Test apparatus and materials.**

(a) \* \* \*

(2) \* \* \*

(ii) *Stop thread supply*. This supply, consisting of a spool of 3-ply, white, mercerized, 100% cotton sewing thread, with a Tex size of  $40 \pm 5$  Tex, shall be fastened to the side of the chamber and can be withdrawn by releasing the thumbscrew holding it in position.

\* \* \* \* \*

(b) \* \* \*

(6) *Commercial dry cleaning machine.* The commercial dry cleaning machine shall be capable of providing a complete automatic dry-to-dry cycle using perchloroethylene solvent or hydrocarbon solvent and a cationic dry cleaning detergent as specified in § 1610.6(b)(1)(i).

(7) *Dry cleaning solvent.* The solvent shall be perchloroethylene, commercial grade, or hydrocarbon solvent, commercial grade.

\* \* \* \* \*

5. Amend § 1610.6 by revising paragraphs (b)(1)(i)(A), (b)(1)(ii), and(b)(1)(iii) to read as follows:

**§ 1610.6 Test procedure.**

\* \* \* \* \*

(b) \* \* \*

(1) \* \* \*

(i) \* \* \*

(A) All samples shall be dry cleaned before they undergo the laundering procedure.

Samples shall be dry cleaned in a commercial dry cleaning machine, using one of the following prescribed conditions:

(1) For perchloroethylene:

(i) Solvent: Perchloroethylene, commercial grade.

(ii) Detergent class: Cationic.

(iii) Cleaning time: 10-15 minutes.

(iv) Extraction time: 3 minutes.

(v) Drying Temperature: 60-66°C (140-150°F).

(vi) Drying Time: 18-20 minutes.

(vii) Cool Down/Deodorization time: 5 minutes.

(2) For hydrocarbon:

(i) Solvent: Hydrocarbon.

- (ii) Detergent Class: Cationic.
- (iii) Cleaning Time: 20-25 minutes.
- (iv) Extraction Time: 4 minutes.
- (v) Drying Temperature: 60-66°C (140-150°F).
- (vi) Drying Time: 20-25 minutes.
- (vii) Cool Down/Deodorization Time: 5 minutes.

Samples shall be dry cleaned in a load that is 80% of the machine's capacity.

\* \* \* \* \*

(ii) *Laundering procedure.* The sample, after being subjected to the dry cleaning procedure, shall be washed and dried one time in accordance with section 9.2, section 9.4, section 12.2(A), Table I “(1) Normal,” “(IV) Hot,” and Table VI “(Aiii) Permanent Press” of AATCC LP1-2021 (incorporated by reference, see § 1610.6(b)(1)(iii)). Washing shall be performed in accordance with the detergent (powder) specified in section 9.4 of AATCC LP1-2021; parameters for water level, agitator speed, stroke length, washing time, spin speed, spin time, and wash temperature specified in Table I, “Standard Washing Machine Parameters,” “(1) Normal” and “(IV) Hot” of AATCC LP1-2021; and a maximum wash load as specified in section 9.2 of AATCC LP1-2021, which may consist of any combination of test samples and dummy pieces. Drying shall be performed in accordance with section 12.2(A) of AATCC LP1-2021, Tumble Dry, using the exhaust temperature and cool down time specified in Table VI, “Standard Tumble Dryer Parameters,” “(Aiii) Permanent Press” of AATCC LP1-2021.

(iii) AATCC LP1-2021, Laboratory Procedure for Home Laundering: Machine Washing, 2021, is incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. A read-only copy of the standard is available for viewing on the AATCC website. You may obtain a copy from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709; telephone (919) 549-8141; [www.aatcc.org](http://www.aatcc.org). You may

inspect a copy at the Office of the Secretary, U.S. Consumer Product Safety Commission, Room 710, 4330 East West Highway, Bethesda, MD 20814, telephone (301) 504-7479, e-mail [cpssc-os@cpsc.gov](mailto:cpssc-os@cpsc.gov), or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, e-mail [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: [www.archives.gov/federal-register/cfr/ibr-locations.html](http://www.archives.gov/federal-register/cfr/ibr-locations.html).

\* \* \* \* \*

6. Amend § 1610.7 by revising paragraph (b) to read as follows:

**§ 1610.7 Test sequence and classification criteria.**

\* \* \* \* \*

(b) *Test sequence and classification criteria.* (1) Step 1, Plain Surface Textile Fabrics in the original state.

(i) Conduct preliminary tests in accordance with § 1610.6(a)(2)(i) to determine the fastest burning direction of the fabric.

(ii) Prepare and test five specimens from the fastest burning direction. The burn times determine whether to assign the preliminary classification and proceed to § 1610.6(b) or to test five additional specimens.

(iii) Assign the preliminary classification of Class 1, Normal Flammability, and proceed to § 1610.6(b) when:

(A) There are no burn times; or

(B) There is only one burn time, and it is equal to or greater than 3.5 seconds; or

(C) The average burn time of two or more specimens is equal to or greater than 3.5 seconds.

(iv) Test five additional specimens when there is either only one burn time, and it is less than 3.5 seconds; or there is an average burn time of less than 3.5 seconds. Test these five additional specimens from the fastest burning direction as previously determined by the preliminary specimens. The burn times for the 10 specimens determine whether to:

(A) Stop testing and assign the final classification as Class 3, Rapid and Intense Burning, only when there are two or more burn times with an average burn time of less than 3.5 seconds; or

(B) Assign the preliminary classification of Class 1, Normal Flammability, and proceed to § 1610.6(b) when there are two or more burn times with an average burn time of 3.5 seconds or greater.

(v) If there is only one burn time out of the 10 test specimens, the test is inconclusive. The fabric cannot be classified.

(2) Step 2, Plain Surface Textile Fabrics after refurbishing in accordance with § 1610.6(b)(1).

(i) Conduct preliminary tests in accordance with § 1610.6(a)(2)(i) to determine the fastest burning direction of the fabric.

(ii) Prepare and test five specimens from the fastest burning direction. The burn times determine whether to stop testing and assign the preliminary classification or to test five additional specimens.

(iii) Stop testing and assign the preliminary classification of Class 1, Normal Flammability, when:

(A) There are no burn times; or  
(B) There is only one burn time, and it is equal to or greater than 3.5 seconds; or  
(C) The average burn time of two or more specimens is equal to or greater than 3.5 seconds.

(iv) Test five additional specimens when there is only one burn time, and it is less than 3.5 seconds; or there is an average burn time less than 3.5 seconds. Test five additional specimens from the fastest burning direction as previously determined by the preliminary specimens. The burn times for the 10 specimens determine the preliminary classification when:

(A) There are two or more burn times with an average burn time of 3.5 seconds or greater. The preliminary classification is Class 1, Normal Flammability; or

(B) There are two or more burn times with an average burn time of less than 3.5 seconds. The preliminary and final classification is Class 3, Rapid and Intense Burning; or

(v) If there is only one burn time out of the 10 specimens, the test results are inconclusive. The fabric cannot be classified.

(3) Step 1, Raised Surface Textile Fabric in the original state.

(i) Determine the area to be most flammable per § 1610.6(a)(3)(i).

(ii) Prepare and test five specimens from the most flammable area. The burn times and visual observations determine whether to assign a preliminary classification and proceed to § 1610.6(b) or to test five additional specimens.

(iii) Assign the preliminary classification and proceed to § 1610.6(b) when:

(A) There are no burn times. The preliminary classification is Class 1, Normal Flammability; or

(B) There is only one burn time and it is less than 4.0 seconds without an SFBB test result code, or it is 4.0 seconds or greater with or without an SFBB test result code. The preliminary classification is Class 1, Normal Flammability; or

(C) There are no base burns (SFBB) regardless of the burn time(s). The preliminary classification is Class 1, Normal Flammability; or

(D) There are two or more burn times with an average burn time of 0.0 to 7.0 seconds with a surface flash only. The preliminary classification is Class 1, Normal Flammability; or

(E) There are two or more burn times with an average burn time greater than 7.0 seconds with any number of base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(F) There are two or more burn times with an average burn time of 4.0 through 7.0 seconds (both inclusive) with no more than one base burn (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(G) There are two or more burn times with an average burn time less than 4.0 seconds with no more than one base burn (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(H) There are two or more burn times with an average burn time of 4.0 through 7.0 seconds (both inclusive) with two or more base burns (SFBB). The preliminary classification is Class 2, Intermediate Flammability.

(iv) Test five additional specimens when the tests of the initial five specimens result in either of the following: There is only one burn time and it is less than 4.0 seconds with a base burn (SFBB); or the average of two or more burn times is less than 4.0 seconds with two or more base burns (SFBB). Test these five additional specimens from the most flammable area. The burn times and visual observations for the 10 specimens will determine whether to:

(A) Stop testing and assign the final classification only if the average burn time for the 10 specimens is less than 4.0 seconds with three or more base burns (SFBB). The final classification is Class 3, Rapid and Intense Burning; or

(B) Assign the preliminary classification and continue on to § 1610.6(b) when:

(1) The average burn time is less than 4.0 seconds with no more than two base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(2) The average burn time is 4.0 to 7.0 seconds (both inclusive) with no more than 2 base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(3) The average burn time is greater than 7.0 seconds. The preliminary classification is Class 1, Normal Flammability; or

(4) The average burn time is 4.0 to 7.0 seconds (both inclusive) with three or more base burns (SFBB). The preliminary classification is Class 2, Intermediate Flammability; or



(v) If there is only one burn time out of the 10 specimens, the test is inconclusive. The fabric cannot be classified.

(4) Step 2, Raised Surface Textile Fabric After Refurbishing in accordance with § 1610.6(b).

(i) Determine the area to be most flammable in accordance with § 1610.6(a)(3)(i).

(ii) Prepare and test five specimens from the most flammable area. Burn times and visual observations determine whether to stop testing and determine the preliminary classification or to test five additional specimens.

(iii) Stop testing and assign the preliminary classification when:

(A) There are no burn times. The preliminary classification is Class 1, Normal Flammability; or

(B) There is only one burn time, and it is less than 4.0 seconds without an SFBB test result code; or it is 4.0 seconds or greater with or without an SFBB test result code. The preliminary classification is Class 1, Normal Flammability; or

(C) There are no base burns (SFBB) regardless of the burn time(s). The preliminary classification is Class 1, Normal Flammability; or

(D) There are two or more burn times with an average burn time of 0.0 to 7.0 seconds with a surface flash only. The preliminary classification is Class 1, Normal Flammability; or

(E) There are two or more burn times with an average burn time greater than 7.0 seconds with any number of base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(F) There are two or more burn times with an average burn time of 4.0 to 7.0 seconds (both inclusive) with no more than one base burn (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(G) There are two or more burn times with an average burn time less than 4.0 seconds with no more than one base burn (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(H) There are two or more burn times with an average burn time of 4.0 to 7.0 seconds (both inclusive) with two or more base burns (SFBB). The preliminary classification is Class 2, Intermediate Flammability.

(iv) Test five additional specimens when the tests of the initial five specimens result in either of the following: There is only one burn time, and it is less than 4.0 seconds with a base burn (SFBB); or the average of two or more burn times is less than 4.0 seconds with two or more base burns (SFBB).

(v) If required, test five additional specimens from the most flammable area. The burn times and visual observations for the 10 specimens determine the preliminary classification when:

(A) The average burn time is less than 4.0 seconds with no more than two base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(B) The average burn time is less than 4.0 seconds with three or more base burns (SFBB). The preliminary and final classification is Class 3, Rapid and Intense Burning; or

(C) The average burn time is greater than 7.0 seconds. The preliminary classification is Class 1, Normal Flammability; or

(D) The average burn time is 4.0 to 7.0 seconds (both inclusive), with no more than two base burns (SFBB). The preliminary classification is Class 1, Normal Flammability; or

(E) The average burn time is 4.0 to 7.0 seconds (both inclusive), with three or more base burns (SFBB). The preliminary classification is Class 2, Intermediate Flammability; or

(vi) If there is only one burn time out of the 10 specimens, the test is inconclusive. The fabric cannot be classified.

7. Amend § 1610.8 by revising paragraph (b) to read as follows:

## **§ 1610.8 Reporting results.**

\* \* \* \* \*

(b) *Test result codes.* The following are definitions for the test result codes, which shall be used for recording flammability results for each specimen that is burned.

(1) For Plain Surface Textile Fabrics:

(i) DNI Did not ignite.

(ii) IBE Ignited, but extinguished.

(iii) \_.\_ sec. Actual burn time measured and recorded by the timing device.

(2) For Raised Surface Textile Fabrics:

(i) \_.\_ SFBB Time in seconds, surface flash base burn starting at places other than the point of impingement as a result of surface flash.

(ii) \_.\_ SFBB poi Time in seconds, surface flash base burn starting at the point of impingement.

(iii) \_.\_ SFBB poi\* Time in seconds, surface flash base burn possibly starting at the point of impingement. The asterisk is accompanied by the following statement: “Unable to make absolute determination as to source of base burns.” This statement is added to the result of any specimen if there is a question as to origin of the base burn.

(iv) \_.\_ SF only Time in seconds, surface flash only. No damage to the base fabric.

(v) SF poi Surface flash, at the point of impingement only (equivalent to “did not ignite” for plain surfaces).

(vi) SF uc Surface flash, under the stop thread, but does not break the stop thread.

(vii) SF pw Surface flash, part way. No time shown because the surface flash did not reach the stop thread.

**Alberta E. Mills,**

*Secretary,*

*Consumer Product Safety Commission.*

